

Claims

What is claimed is:

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27

1. An adenovirus vector comprising an adenovirus gene under transcriptional control of a transcriptional regulatory element (TRE) comprising a cell status-specific TRE.

2. The adenovirus vector of claim 1, wherein the adenovirus gene is essential for viral replication.

3. The adenovirus vector of claim 2, wherein the adenovirus gene is an early gene.

4. The adenovirus vector of claim 2, wherein the adenovirus gene is a late gene.

5. The adenovirus vector of claim 3, wherein the adenovirus early gene is E1A.

6. The adenovirus vector of claim 3, wherein the adenovirus early gene is E1B.

7. The adenovirus vector of claim 3, wherein the adenovirus early gene is E4.

Sub B⁷
27

8. The adenovirus vector of claim 1, wherein the cell status-specific TRE is human.

9. The adenovirus vector of claim 1, wherein the cell status-specific TRE comprises a hypoxia responsive element (HRE).

10. The adenovirus vector of claim 9, wherein the HRE comprises SEQ ID NO:1.

11. The adenovirus vector of claim 1, wherein the cell status-specific TRE comprises a cell cycle specific element.

12. The adenovirus vector of claim 11, wherein the cell cycle-specific element is from the E2F-1 gene.

5 13. The adenovirus vector of claim 1, wherein the cell status-specific TRE comprises a heat-inducible element.

Sub B⁸ 14. The adenovirus vector of claim 1, further comprising a cell type-specific TRE.

10 15. The adenovirus vector of claim 14, wherein the cell type-specific TRE is prostate cell specific.

16. The adenovirus vector of claim 15, wherein the prostate cell-specific TRE is a PSA-TRE.

17. The adenovirus vector of claim 1, further comprising a transgene under transcriptional control of a second cell status-specific TRE.

Sub a² 15 18. An adenovirus vector comprising an adenovirus gene under transcriptional control of a TRE comprising a cell status-specific TRE and a cell-type specific TRE.

19 The adenovirus vector of claim 18, wherein the adenovirus gene is an early gene.

20 20. The adenovirus vector of claim 19, wherein the adenovirus early gene is E1A.

Sub B⁹ 21. The adenovirus vector of claim 20, wherein the cell status-specific TRE comprises an HRE and the cell-type specific TRE is a PSA-TRE.

~~23. A composition comprising an adenovirus vector of claim 1.~~

25. A host cell comprising the adenovirus vector of claim 1.

27. A method for conferring selective cytotoxicity on a target cell, said method comprising contacting a cell which allows a cell status-specific TRE to function with an adenovirus vector of claim 1, whereby the vector enters the cell.

add a^3
add B''
add c'